



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,205	09/26/2003	Masatoshi Yamada	117334	4489

25944 7590 09/22/2005

OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

GARCIA JR, RENE

ART UNIT	PAPER NUMBER
----------	--------------

2853

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/670,205

Applicant(s)

YAMADA, MASATOSHI

Examiner

Rene Garcia, Jr.

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-31 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06/15/05; 11/04/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claim 17 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 27 July 2005.
2. This application contains claim 17 drawn to an invention nonelected with traverse in Paper No. 27 July 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
3. Applicant's election with traverse of Species I in the reply filed on 27 July 2005 is acknowledged. The traversal is on the ground(s) that the identified species are not independent and that a serious burden does not exist. This is not found persuasive because one claim recites limitations found in species I but not found in species II and one claim recites limitation found in species II but not found in species II, thereby claims have mutually exclusive characteristics; thereby posing a serious burden to examine.

The requirement is still deemed proper and is therefore made FINAL.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: S550. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement

Art Unit: 2853

drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: claims 2, 3, 13, 19, 20 and 30 "sample image" (examiner unsure whether applicant means "plurality of sample images" or another).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-16, and 18-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al. (US 6,439, 684) in view of Kato et al. (US 6,450, 606).

Yoshimura et al. disclose the following claimed limitations:

*regarding claims 1 and 18, image forming apparatus/**inkjet printer**/ (col. 5, line 4) provided with a transfer unit/**transporting roller, 3 & 5**/ (fig. 2; col. 5, lines 14-38) and a record head/**8**/ having a plurality of record elements (col. 5, line 44) arranged thereon for recording dots on a recording material, the apparatus forming an image on the recording material based on a transfer operation for making the transfer unit transfer the recording material and a move operation for making the record head travel to a direction orthogonal to a transfer direction of the recording material (col. 5, lines 39-52), the image forming apparatus/**inkjet printer**/ comprising:

*pattern generation unit that generates a predetermined test pattern image

*record unit that records the test pattern image generated by the pattern generation unit on the recording material transferred by the transfer unit using the record head (col. 6, lines 33-67)

*input unit (fig. 7 - S6; col. 11, lines 2-11) which inputs a result based on change in the transfer condition of the transfer unit

*correction unit that corrects the transfer condition of the transfer unit based on the comparison result received via the input unit (fig. 7: S7; col. 11, lines 12-20)

*regarding claims 4 and 21, nonvolatile transfer condition storage unit/**hard disc, 23**/ that stores the transfer condition, wherein

*optimal transfer condition calculated by the correction unit is stored in the transfer condition storage unit (fig. 8, S8; col. 11, lines 19-20)

Art Unit: 2853

*regarding claims 6 and 23, record unit/**8**/ records the sample images with limiting the record elements of the record head used for recording or records the sample images with the transfer amount of the recording material less than normal

*regarding claims 7 and 24, record unit records the plurality of sample images on the recording material side by side in a moving direction of the record head

*regarding claims 8 and 25, test pattern image recorded on the recording material by the record unit/**recording head, 8**/ is composed of a first pattern image/**P1**/ and a second pattern image/**P2**/ which are recorded on the recording material/**S**/ one by one, the recording material being transferred between the recordings of two pattern images (figs. 3a, 3b, 4; col. 6, lines 40-44)

*record unit records the first pattern image/**P1**/ using a first part/**Na**/ of the record elements of the record head, and records the second pattern image/**P2**/ using a second part/**Nb-n to Nb+n**/ of the record elements which is different from the first part in position in the transfer direction of the recording material (fig. 4; lines 44-67)

*regarding claims 9 and 26, first part/**Na**/ and the second part/**Nb-n to Nb+n**/ correspond to respective end parts of the record elements of the record head/**8**/ in the transfer direction of the recording material (fig. 4)

Art Unit: 2853

*regarding claims 10 and 27, record elements of the record head//8/ eject ink drops to form dots on the recording material

*record control unit records the test pattern image on the recording material only when the record head is moved to one predetermined direction (col. 5, lines 42-53)

*regarding claims 11 and 28, test pattern image/P1 & P2/ is an image having a pattern which varies depending on the error in the amount transferred by the transfer unit (col. 6, lines 33-39; error/displacement/)

*regarding claims 12 and 29, transfer unit comprises an upstream transfer roller/5/ that transfers the recording material on an upstream side of the record head/8/ and a downstream transfer roller/6/ that transfers the recording material on a downstream side of the record head/8/

*record unit/8/ records the test pattern image/P1 & P2/ in an area of the recording material/S/ in which the recording material is transferred only by the downstream transfer roller (fig. 8c; col. 12, lines 34-36)

*correction unit corrects the amount transferred by the downstream transfer roller/6/ (col. 13, lines 16-21; col. 11 lines 12-20; when in configuration of fig 8c control of roller/6/ maintained in relation to correction amount)

*regarding claims 14 and 31, record control unit records at least two test pattern/P1 & P2/ images in different phases of at least one of the transfer rollers (figs. 2 & 4; inherent feature

Art Unit: 2853

for feeding the recording material that the transfer rollers have to rotate [change phase]; since test pattern images are not on top of each other recording material has to feed)

*regarding claim 15, transfer unit is a device that is driven by a drive motor/19/ (fig. 6)

*transfer condition corresponds to a command value to the drive motor required for transferring the recording material by a predetermined distance (col. 11, lines 12-20)

*regarding claim 16, drive motor/19/ is a pulse motor (col. 9, lines 50-54), and the command value is a rotation pulse number of the pulse motor (col. 11, lines 12-18)

*further regarding claim 18, method being for correcting the transfer condition of the transfer unit/transporting roller, 3 & 5/ (fig. 2; col. 5, lines 14-38)

*the method comprising steps of:

*generating a predetermined test pattern image (col. 6, lines 33-67); recording the test pattern image generated in the pattern generation step on the recording material transferred by the transfer unit using the record head (fig. 7, S2, S3, S4); inputting information from outside (fig. 7, S6); and correcting the transfer condition of the transfer unit based on the information inputted in the input step (fig. 7, S7)

Yoshimura et al. does not disclose the following claimed limitations:

*regarding claims 1, 13, 18, 30 and 31, visual comparison between the test pattern image and a plurality of sample images

Art Unit: 2853

*regarding claims 2 and 19, sample image is comprised of images expected to be obtained when the test pattern images generated by the pattern generation unit are recorded by the record unit under an optimal transfer condition of the transfer unit and under conditions different from the optimal transfer condition by predetermined values, and the sample image is divided into a plurality of segments per transfer condition

*regarding claims 3 and 20, command value indicating which of the plurality of segments in the sample image the recorded test pattern image corresponds to or falls between is inputted via the input unit, and the correction unit calculates the optimal transfer condition based on the command value to correct the transfer condition

*regarding claims 5 and 22, sample generation unit that generates the plurality of sample images based on the plurality of transfer conditions of the transfer unit

*record unit records the test pattern image generated by the pattern generation unit and the sample images generated by the sample generation unit on the recording materials transferred by the transfer unit using the record head

*regarding claims 6 and 23, record unit records the sample images with limiting the record elements of the record head used for recording or records the sample images with the transfer amount of the recording material less than normal

*regarding claims 7 and 24, record unit records the plurality of sample images on the recording material side by side in a moving direction of the record head

*further regarding claims 13 and 31, correction unit comprises:

* first correction unit that corrects the transfer condition of the upstream transfer roller

*second correction unit that correct the transfer condition of the downstream transfer roller.

Kato et al. discloses the following:

*regarding claims 1, 13, 18, 30 and 31, visual comparison between the test pattern image and a plurality of sample images (figs. 7-9; col. 9, lines 46-67; col. 10, lines 1-8) for the purpose of a highly precise visual detection caused by output characteristic variations of individual printing apparatus.

*regarding claims 2 and 19, sample image¹ is comprised of images expected to be obtained when the test pattern images generated by the pattern generation unit are recorded by the record unit under an optimal transfer condition of the transfer unit and under conditions different from the optimal transfer condition by predetermined values, and the sample image is divided into a plurality of segments per transfer condition (col. 9, lines 52-64; col. 10, lines 9-35) for the purpose of balance of the output characteristic among the printing apparatus by selecting a patch whose test area is closest to the reference/sample image/ pattern.

¹ Examiner takes the position that "sample image" is "plurality of sample images" disclosed in claim 1

Art Unit: 2853

*regarding claims 3 and 20, command value/color patch no. (n)/ (fig. 6) indicating which of the plurality of segments in the sample image¹ the recorded test pattern image corresponds to or falls between is inputted via the input unit, and the correction unit calculates the optimal transfer condition based on the command value to correct the transfer condition (fig. 6, S130) for the purpose of correcting adjustment to achieve the desired printing.

*regarding claims 5 and 22, sample generation unit that generates the plurality of sample images based on the plurality of transfer conditions of the transfer unit (fig. 7; col. 9, lines 59-65)

*record unit records the test pattern image generated by the pattern generation unit and the sample images generated by the sample generation unit on the recording materials transferred by the transfer unit using the record head (fig. 6, S110; test pattern includes sample images and test pattern) for the purpose of a highly precise visual detection caused by output characteristic variations of individual printing apparatus.

*regarding claims 6 and 23, record unit/5a-5d/ records the sample images with limiting the record elements of the record head used for recording or records the sample images with the transfer amount of the recording material less than normal for the purpose of (fig. 3; col. 13, lines 22-26; K is only part of the print head used to record the reference image [limited record elements])

¹ Examiner takes the position that "sample image" is "plurality of sample images" disclosed in claim 1

*regarding claims 7 and 24, record unit records the plurality of sample images on the recording material side by side in a moving direction of the record head for the purpose of (fig. 1; col. 3, lines 15-26)

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize a visual comparison between the test pattern image and a plurality of sample images; sample image¹ is comprised of images expected to be obtained when the test pattern images generated by the pattern generation unit are recorded by the record unit under an optimal transfer condition of the transfer unit and under conditions different from the optimal transfer condition by predetermined values, and the sample image¹ is divided into a plurality of segments per transfer condition; command value indicating which of the plurality of segments in the sample image the recorded test pattern image corresponds to or falls between is inputted via the input unit, and the correction unit calculates the optimal transfer condition based on the command value to correct the transfer condition; sample generation unit that generates the plurality of sample images based on the plurality of transfer conditions of the transfer unit, record unit records the test pattern image generated by the pattern generation unit and the sample images generated by the sample generation unit on the recording materials transferred by the transfer unit using the record head as taught by Kato et al. into Yoshimura et al. for the purposes of a highly precise visual detection caused by output characteristic variations of individual printing apparatus; balance of the output characteristic among the printing apparatus by selecting a patch whose test area is closest to the reference/sample image/ pattern; correcting adjustment to achieve the desired printing.

¹ Examiner takes the position that "sample image" is "plurality of sample images" disclosed in claim 1

Art Unit: 2853

*further regarding claims 13 and 30:

* first correction unit that corrects the transfer condition of the upstream transfer roller

*second correction unit that correct the transfer condition of the downstream transfer roller

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a correction unit having a separate correction unit for handling the upstream correction and having a separate correction unit for handling the downstream correction, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art for the purpose of having a specific correction unit to handle each aspect of the transfer (upstream/downstream). *Nerwin v. Erlichman*, 168 USPQ 177, 179.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a correction unit having a separate correction unit for handling the upstream correction and having a separate correction unit for handling the downstream correction, as taught by Yoshimura et al. for the purpose of more correct recording being made possible when carrying out recording in different transfer states.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kise (US 2001/0024284) includes a method and apparatus for comparison test for corrected and non-corrected test patterns. Sorenson et al. (US 5,451,990) includes a test pattern

¹ Examiner takes the position that "sample image" is "plurality of sample images" disclosed in claim 1

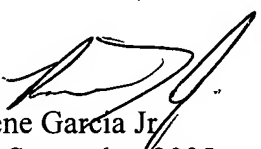
Art Unit: 2853

for alignment of a plurality of print heads using considerable information with respect to the print head.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rene Garcia, Jr. whose telephone number is (571) 272-5980. The examiner can normally be reached on M-F 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Rene Garcia Jr.
13 September 2005

 9/05
K. FEGGINS
PRIMARY EXAMINER